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STIC Database Tracking Number: 96024

TO: Mark Clardy
Location: CM1/2D11/2D19
Art Unit: 1616
Tuesday, June 10, 2003
Case Serial Number: 890086

From: Paul Schulwitz
Location: Biotech-Chem Library
CM1-6B06
Phone: 305-1954

paul.schulwitz@uspto.gov

Search Notes

Examiner Clardy,

See attached results.

If you have any questions about this search feel free to contact me at any time.

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Paul Schulwitz
Technical Information Specialist
STIC Biotech/Chem Library
(703)305-1954

96024

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SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Mark Clardy Examiner #: 69462 Date: 6/6/2003
 Art Unit: 1616 Phone Number: 308-4550 Serial Number: 09/892,086
 Mail Box and Bldg/Room Location: CMI-2D11 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

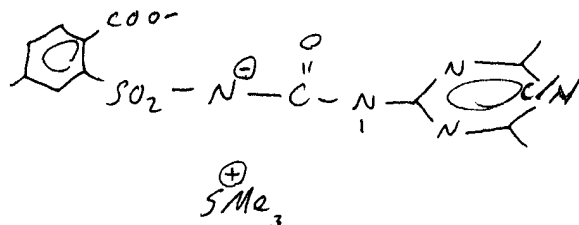
Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers; and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: _____

Inventors (please provide full names): _____

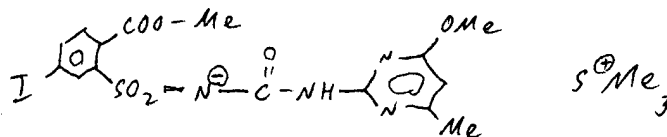
Earliest Priority Filing Date: _____

For Sequence Searches Only Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.



Tertiary sulfonium salt of sulfamylurea herbicides.

Elected species: Iodosulfuron-methyl, trimethylsulfonium salt;



Claims, B.I. Data attached

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	Type of Search	Vendors and cost where applicable
Searcher: _____	NA Sequence (#) _____	STN <u>538.69</u>
Searcher Phone #: _____	AA Sequence (#) _____	Dialog _____
Searcher Location: _____	Structure (#) <u>B1</u>	Questel/Orbit _____
Date Searcher Picked Up: <u>6/10</u>	Bibliographic _____	Dr.Link _____
Date Completed: <u>6/10</u>	Litigation _____	Lexis/Nexis _____
Searcher Prep & Review Time: <u>30</u>	Fulltext _____	Sequence Systems _____
Clerical Prep Time: _____	Patent Family _____	WWW/Internet _____
Online Time: <u>20</u>	Other _____	Other (specify) _____



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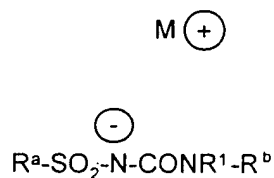
Bib Data Sheet

CONFIRMATION NO. 6212

SERIAL NUMBER 09/890,086	FILING DATE 11/26/2001 RULE	CLASS 504	GROUP ART UNIT 1616	ATTORNEY DOCKET NO. 514413-3884
APPLICANTS Gerhard Schnabel, Eisenfeld, GERMANY; Detlev Haase, Frankfurt, GERMANY; Thomas Maier, Hofheim, GERMANY; Julio Martinez de Una, Liederbach, GERMANY; Jochen Wurtz, Bingen am Rhein, GERMANY;				
** CONTINUING DATA ***** THIS APPLICATION IS A 371 OF PCT/EP00/00469 01/22/2000				
** FOREIGN APPLICATIONS *****				
Foreign Priority claimed <input checked="" type="checkbox"/> yes <input type="checkbox"/> no 35 USC 119 (a-d) conditions met <input checked="" type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> Met after Allowance Verified and Acknowledged		STATE OR COUNTRY GERMANY	SHEETS DRAWING	TOTAL CLAIMS 18
Examiner's Signature <i>[Signature]</i> Initials				INDEPENDENT CLAIMS 2
ADDRESS William F Lawrence Frommer Lawrence & Haug 745 Fifth Avenue New York ,NY 10151				
TITLE Formulation of herbicides and plant growth regulators				
FILING FEE RECEIVED 990	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:		<input type="checkbox"/> All Fees <input type="checkbox"/> 1.16 Fees (Filing) <input type="checkbox"/> 1.17 Fees (Processing Ext. of time) <input type="checkbox"/> 1.18 Fees (Issue) <input type="checkbox"/> Other _____ <input type="checkbox"/> Credit	

Patent claims:

1. A formulation, comprising
 - a) at least one phosphonium or sulfonium salt of a sulfonylurea, where the phosphonium and sulfonium cation of the salt has at least one substituent which is different from hydrogen, and
 - b) customary auxiliaries and additives.
2. A formulation according to claim 1, comprising at least one quaternary phosphonium salt or at least one tertiary sulfonium salt of a sulfonylurea.
3. A formulation according to claim 1 or 2, comprising at least one sulfonylurea salt of the formula (Ia)

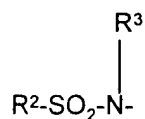


(Ia)

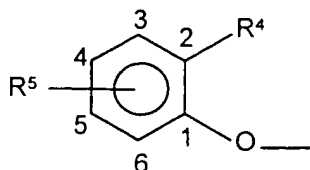
in which R^{a} is a substituted aliphatic, aromatic or heterocyclic radical or an electron-withdrawing group, such as a substituted sulfonamide radical;

preferably

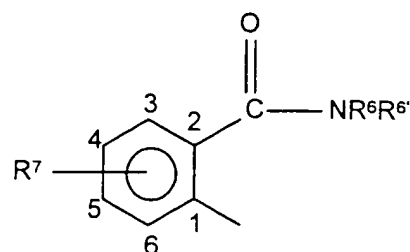
R^{a} is a radical of the formula II-IVc,



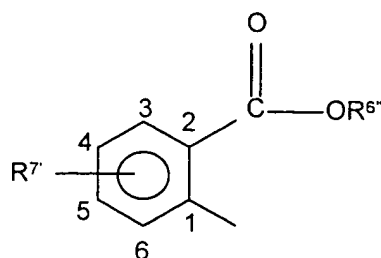
(II)



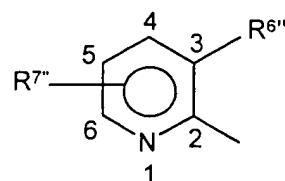
(III)



(IVa)

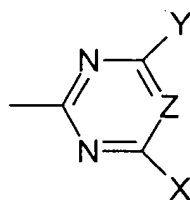


(IVb)



(IVc)

- 5 R^b is a heterocyclyl radical, preferably a nitrogen-containing heterocyclyl radical, particularly preferably a heterocyclyl radical having 2 or 3 nitrogen atoms in the ring, very particularly preferably a radical



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in which

R^1 is H or a $\text{C}_1\text{-C}_{10}$ -hydrocarbon radical, such as $(\text{C}_1\text{-C}_6)$ -alkyl,

- 15 R^2 is a substituted or unsubstituted $\text{C}_1\text{-C}_{20}$ -hydrocarbon radical, such as substituted or unsubstituted $(\text{C}_1\text{-C}_6)$ -alkyl, substituted or unsubstituted $(\text{C}_2\text{-C}_6)$ -alkenyl, substituted or unsubstituted $(\text{C}_2\text{-C}_6)$ -alkynyl, substituted or unsubstituted $(\text{C}_3\text{-C}_7)$ -cycloalkyl,

- 20 R^3 is a substituted or unsubstituted $\text{C}_1\text{-C}_{20}$ -hydrocarbon radical, such as substituted or unsubstituted $(\text{C}_1\text{-C}_6)$ -alkyl, substituted or

unsubstituted (C₂-C₆)-alkenyl, substituted or unsubstituted (C₂-C₆)-alkynyl, substituted or unsubstituted (C₃-C₇)-cycloalkyl,

5 R^4 is halogen, such as F, Cl, Br, I, or a substituted or unsubstituted C₁-C₂₀-hydrocarbon radical or C₁-C₂₀-hydrocarboxy radical, such as (C₁-C₆)-alkyl, (C₂-C₆)-alkenyl, (C₂-C₆)-alkynyl, (C₁-C₆)-alkoxy, (C₃-C₆)-alkenyloxy, (C₃-C₆)-alkynyloxy, where the 6 last-mentioned radicals may be substituted by one or more radicals, preferably from the group consisting of halogen, such as F, Cl, Br or I, and (C₁-C₃)-alkoxy,

15 R^5 is H, halogen, such as F, Cl, Br, I, or a substituted or unsubstituted C₁-C₂₀-hydrocarbon radical or C₁-C₂₀-hydrocarboxy radical, such as (C₁-C₆)-alkyl, which may be substituted by one or more radicals from the group consisting of halogen, such as F, Cl, Br or I, and (C₁-C₃)-alkoxy, or (C₁-C₅)-alkoxy which may be substituted by one or more radicals from the group consisting of halogen (F, Cl, Br, I) and (C₁-C₃)-alkoxy,

20 R^6 and $R^{6'}$ are identical or different and are H or a substituted or unsubstituted C₁-C₂₀-hydrocarbon radical, such as C₁-C₆-alkyl (for example Me, Et, ⁿPr, ⁱPr, ^cPr), where R^6 and $R^{6'}$ may form an unsubstituted or substituted ring,

25 R^7 is H, halogen, such as F, Cl, Br or I, OH, $NR^X R^Y$, in which R^X and R^Y are H or (C₁-C₃)-alkyl, or R^7 is N-(C₁-C₃)-alkyl-N-acylamino or N-acylamino or a substituted or unsubstituted C₁-C₂₀-hydrocarbon radical or hydrocarboxy radical, such as (C₁-C₃)-alkyl, (C₁-C₃)-haloalkyl, halogen, (C₁-C₃)-alkyl-(N-(C₁-C₃)-alkyl-N-acylamino), (C₁-C₃)-alkyl-(N-acylamino) or (C₁-C₃)-alkoxy,

35 $R^{6''}$ is a substituted or unsubstituted C₁-C₂₀-hydrocarbon radical, such as substituted or unsubstituted (C₁-C₆)-alkyl, substituted or unsubstituted (C₃-C₆)-alkenyl, substituted or unsubstituted (C₃-C₆)-cycloalkyl, substituted or unsubstituted (C₃-C₇)-alkynyl, substituted or unsubstituted (C₄-C₈)-cycloalkylalkyl,

5 $R^{7'}$ is H, halogen, such as F, Cl, Br or I, OH, $NR^X R^Y$, in which R^X and R^Y are H or (C₁-C₃)-alkyl, or $R^{7'}$ is N-(C₁-C₃)-alkyl-N-acylamino, N-acylamino or a substituted or unsubstituted C₁-C₂₀-hydrocarbon radical or C₁-C₂₀-hydrocarboxy radical, such as (C₁-C₃)-alkyl, (C₁-C₃)-haloalkyl, (C₁-C₃)-alkyl-(N-(C₁-C₃)-alkyl-N-acylamino), (C₁-C₃)-alkyl-(N-acylamino) or (C₁-C₃)-alkoxy,

10 $R^{6''}$ is halogen, such as F, Cl, Br or I, or a substituted or unsubstituted C₁-C₂₀-hydrocarbon-containing radical, such as (C₁-C₆)-alkyl, which may be substituted by one or more radicals from the group consisting of halogen (F, Cl, Br, I) and (C₁-C₃)-alkoxy, (C₁-C₆)-alkoxy which may be substituted by one or more radicals from the group consisting of halogen (F, Cl, Br, I) or (C₁-C₃)-alkoxy, substituted or unsubstituted alkoxycarbonyl, substituted or unsubstituted dialkylaminocarbonyl, substituted or unsubstituted (C₁-C₆)-alkylsulfonyl, (C₁-C₆)-mono- or -dialkylamino, N-(C₁-C₆)-alkyl-N-acylamino or N-acylamino,

20 $R^{7''}$ is H, halogen, such as F, Cl, Br, I, OH, $NR^X R^Y$, in which R^X and R^Y are H or (C₁-C₃)-alkyl, or $R^{7''}$ is a substituted or unsubstituted C₁-C₂₀-hydrocarbon radical or hydrocarboxy radical, such as (C₁-C₆)-alkyl, (C₁-C₆)-haloalkyl, (C₁-C₆)-alkoxy or (C₁-C₆)-haloalkoxy,

25 M^+ is a quaternary phosphonium ion or a tertiary sulfonium ion,

30 X is substituted or unsubstituted (C₁-C₆)-alkyl, substituted or unsubstituted (C₁-C₆)-alkoxy, halogen, such as F, Cl, Br or I, substituted or unsubstituted (C₁-C₆)-mercaptoalkyl or (C₁-C₃)-mono- or (C₁-C₃)-dialkylamino,

35 Y is substituted or unsubstituted (C₁-C₆)-alkyl, substituted or unsubstituted (C₁-C₆)-alkoxy, halogen, such as F, Cl, Br or I, substituted or unsubstituted (C₁-C₆)-mercaptoalkyl or (C₁-C₃)-mono- or (C₁-C₃)-dialkylamino, and

Z is C-halogen, such as CF, CCl, CBr or Cl, CH or N.

4. A formulation as claimed in one or more of claims 1 to 3, comprising one or more agrochemicals which are different from the sulfonylurea salt defined in claim 1, such as herbicides, fungicides, insecticides, growth regulators, safeners, fertilizers.
5. A formulation as claimed in one or more of claims 1 to 4, comprising a wetting agent having bioactivating properties or a mixture of different wetting agents having bioactivating properties.
6. A formulation as claimed in one or more of claims 1 to 5, comprising a pH-stabilizing substance or substance mixture.
7. A formulation as claimed in one or more of claims 1 to 6, comprising a substance or a substance mixture having antifoam properties.
8. A formulation as claimed in one or more of claims 1 to 7, comprising a substance or a substance mixture which acts as acid scavenger.
9. A formulation as claimed in one or more of claims 1 to 8, comprising a substance or a substance mixture which acts as water scavenger.
10. A formulation as claimed in one or more of claims 1 to 9, comprising a substance or a substance mixture which acts as crystallization inhibitor.
11. A formulation according to one or more of claims 1 to 10, comprising a surfactant or surfactant mixture.
12. A formulation as claimed in one or more of claims 1 to 11, comprising in general 00.1-70.0% by weight of one or more phosphonium or sulfonium salts of sulfonylureas, in general 5.0-95.0% by weight of a polar and/or hydrophobic solvent, in general 2.0-40.0% by weight of a mixture of anionic and nonionic surfactants or a mixture of cationic and nonionic surfactants.

13. The use of the formulation as claimed in one or more of claims 1 to 12 as herbicidal or plant-growth-regulating composition.

14. A compound of the formula (Ia) as defined in claim 3.

5

15. A compound of the formula (Ia) as claimed in claim 14, in which

R^1 is H or Me,

10 R^2 is (C₁-C₃)-alkyl or (C₁-C₃)-haloalkyl, in particular Me and Et,

R^3 is (C₁-C₃)-alkyl or (C₁-C₃)-haloalkyl, in particular Me and Et,

15 R^4 is (C₁-C₆)-alkyl, (C₁-C₆)-haloalkyl or (C₁-C₆)-alkoxy, in particular Me, Et, OMe, OEt or CF₃,

R^5 is H, halogen, such as F, Cl, Br or I, OMe, OEt, Me, CF₃, where the radicals R^5 in the formula (III) which are different from hydrogen are preferably located in the 5-position on the phenyl ring,

20

R^6 and $R^{6'}$ are identical or different C₁-C₆-alkyl radicals, preferably $R^6 = Me$, $R^{6'} = Me$; $R^6 = Me$, $R^{6'} = Et$ and $R^6 = Et$, $R^{6'} = Et$,

25 R^7 is H, Me, Et, CF₃, F, Cl, Br, I, N[(C₁-C₃)-alkyl]- R^8 , NH- R^9 , CH₂N[(C₁-C₃)-alkyl]- R^{10} , CH₂NH- R^{11} , CH₂CH₂N[(C₁-C₃)-alkyl]- R^{12} , CH₂CH₂NH- R^{13} , where the radicals R^7 in the formula (IVa) which are different from hydrogen are preferably located in the 5-position on the phenyl ring and the radicals R^8 to R^{13} are H, (C₁-C₆)-alkyl, (C₁-C₆)-haloalkyl, CHO, COO(C₁-C₆)-alkyl, COO(C₁-C₆)-haloalkyl, SO₂-(C₁-C₆)-alkyl, SO₂-(C₁-C₆)-haloalkyl, CO-(C₁-C₆)-alkyl or CO-(C₁-C₆)-haloalkyl,

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$R^{6''}$ is Me, Et, ⁿPr, ⁱPr, ^cPr, ⁿBu, ⁱBu, ^sBu, ^tBu, ^cBu, in particular Me or Et,

35

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5 $R^{7'}$ is H, Me, Et, CF_3 , F, Cl, Br, I, $N[(C_1-C_3)\text{-alkyl}]\text{-}R^8$, $NH\text{-}(C_1-C_3)\text{-alkyl}$, $CH_2N[(C_1-C_3)\text{-alkyl}]\text{-}R^{10}$, $CH_2NH\text{-}R^{11}$, $CH_2CH_2N[(C_1-C_3)\text{-alkyl}]\text{-}R^{12}$, $CH_2CH_2NH\text{-}R^{13}$, where the radicals $R^{7'}$ in the formula (IVb) which are different from hydrogen are preferably located in the 5-position on the phenyl ring and the radicals R^8 and R^{10} to R^{13} are H, $(C_1-C_6)\text{-alkyl}$, $(C_1-C_6)\text{-haloalkyl}$, CHO, $COO(C_1-C_6)\text{-alkyl}$, $COO(C_1-C_6)\text{-haloalkyl}$, $SO_2\text{-}(C_1-C_6)\text{-alkyl}$, $SO_2\text{-}(C_1-C_6)\text{-haloalkyl}$, $CO\text{-}(C_1-C_6)\text{-alkyl}$ or $CO\text{-}(C_1-C_6)\text{-haloalkyl}$,

10 $R^{6''}$ is Me, Et, Pr, $CH_2CH_2CF_3$, OMe, OEt, O^iPr , OCH_2CH_2Cl , F, Cl, COOMe, COOEt, COO^nPr , COO^iPr , $CONMe_2$, $CONEt_2$, SO_2Me , SO_2Et , SO_2^iPr , unsubstituted or substituted $NH\text{-}(C_1-C_6)\text{-alkyl-acyl}$, unsubstituted or substituted $NH\text{-}(C_3-C_7)\text{-cycloalkyl}$, unsubstituted or substituted $(C_4-C_8)\text{-cycloalkylalkyl}$, unsubstituted or substituted N- $(C_3-C_7)\text{-cycloalkyl-aryl}$, unsubstituted or substituted N- $(C_4-C_8)\text{-cycloalkylalkyl-acyl}$, preferably N- $(C_1-C_6)\text{-alkyl-CHO}$, N- $(C_1-C_6)\text{-alkyl-CO-R}$, N- $(C_1-C_6)\text{-alkyl-SO}_2R$, $NH\text{-CHO}$, $NH\text{-CO-R}$, $NHSO_2R$, where the radicals R are $(C_1-C_6)\text{-(halo)-alkyl}$, $(C_1-C_6)\text{-(halo)-alkoxy}$, $(C_1-C_3)\text{-alkoxy-(}C_1-C_6\text{)-alkyl}$, $(C_1-C_3)\text{-alkoxy-(}C_1-C_6\text{)-alkoxy}$ or mono- and di- $(C_1-C_6)\text{-alkylamino}$,

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$R^{7''}$ is H, F, Cl, Me, Et, CF_3 , OCH_3 , OEt, OCH_2CF_3 , preferably H,

25 M^+ is $[SR^{18}R^{19}R^{20}]^+$ or $[PR^{21}R^{22}R^{23}R^{24}]^+$, where R^{18} to R^{25} are identical or different from one another and are substituted or unsubstituted $(C_1-C_{30})\text{-alkyl}$, substituted or unsubstituted $(C_1-C_{10})\text{-alkyl-(hetero)aryl}$, substituted or unsubstituted $(C_3-C_{30})\text{-(oligo)alkenyl}$, substituted or unsubstituted $(C_3-C_{10})\text{-(oligo)alkenyl-(hetero)aryl}$, substituted or unsubstituted $(C_3-C_{30})\text{-(oligo)alkynyl}$, substituted or unsubstituted $(C_3-C_{10})\text{-(oligo)alkynyl-(hetero)aryl}$, substituted or unsubstituted $(hetero)aryl$, and where two radicals R^{18}/R^{19} , R^{21}/R^{22} and R^{23}/R^{24} together may form an unsubstituted or substituted ring,

30

X is Me, Et, Pr, ⁱPr, CF₃, CCl₃, OMe, OEt, OⁱPr, OCHCl₂, OCH₂CCl₃, OCH₂CF₃, F, Cl, Br, SMe, SEt, NHMe, NMe₂, NHEt, preferably OMe, OEt, Me, Cl

5 Y is Me, Et, Pr, ⁱPr, CF₃, CCl₃, OMe, OEt, OⁱPr, OCHCl₂, OCH₂CCl₃, OCH₂CF₃, F, Cl, Br, SMe, SEt, NHMe, NMe₂, NHEt, preferably OMe, OEt, Me, Cl

and

10

Z is CH or N.

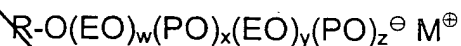
16. The use of one or more compounds of the formula (Ia) as claimed in claim 14 or 15 as herbicidal or plant-growth-regulating agent.

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17. A process for preparing a compound of the formula (Ia) as claimed in claim 14 or 15.

18. The use of a compound of the formula (XVIII)

20



(XVIII)

25

in which

w, x, y and z independently of one another are integers from 0 to 50, R is an unsubstituted or substituted C₈-C₄₀-hydrocarbon,

EO is an ethoxy unit,

PO is a propoxy unit and

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M[⊕] is a phosphonium or sulfonium ion,

for preparing an agrochemical formulation.

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WELTORGANISATION FÜR GEISTIGES EIGENTUM
Internationales BüroINTERNATIONALE ANMELDUNG VERÖFFENTLICHT NACH DEM VERTRAG ÜBER DIE
INTERNATIONALE ZUSAMMENARBEIT AUF DEM GEBIET DES PATENTWESENS (PCT)

(51) Internationale Patentklassifikation ⁷ : A01N 47/38, 47/34, 47/36, 25/30, C11D 1/60	A1	(11) Internationale Veröffentlichungsnummer: WO 00/44227 (43) Internationales Veröffentlichungsdatum: 3. August 2000 (03.08.00)
(21) Internationales Aktenzeichen: PCT/EP00/00469 (22) Internationales Anmeldedatum: 22. Januar 2000 (22.01.00) (30) Prioritätsdaten: 199 03 064.2 27. Januar 1999 (27.01.99) DE 199 63 383.5 28. Dezember 1999 (28.12.99) DE (71) Anmelder (für alle Bestimmungsstaaten ausser US): AVEN- TIS CROPS SCIENCE GMBH [DE/DE]; Mirastrasse 54, D-13509 Berlin (DE). (72) Erfinder; und (75) Erfinder/Anmelder (nur für US): SCHNABEL, Gerhard [DE/DE]; Amselweg 10, D-63820 Elsenfeld (DE). HAASE, Detlev [DE/DE]; Drosselweg 3, D-65929 Frank- furt (DE). MAIER, Thomas [DE/DE]; Kapellenstrasse 16, D-65719 Hofheim (DE). MARTINEZ DE UNA, Julio [ES/DE]; Feldbergstrasse 24, D-65835 Liederbach (DE). WÜRTZ, Jochen [DE/DE]; Grosse Hohl 3F, D-55411 Bingen am Rhein (DE).		(81) Bestimmungsstaaten: AE, AL, AM, AU, AZ, BA, BB, BG, BR, BY, CA, CN, CR, CU, CZ, DM, EE, GD, GE, HR, HU, ID, IL, IN, IS, JP, KG, KP, KR, KZ, LC, LK, LR, LT, LV, MA, MD, MG, MK, MN, MX, NO, NZ, PL, RO, RU, SG, SI, SK, TJ, TM, TR, TT, UA, US, UZ, VN, YU, ZA, ARIPO Patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), eurasisches Patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), europäisches Patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI Patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). Veröffentlicht <i>Mit internationalem Recherchenbericht.</i> <i>Vor Ablauf der für Änderungen der Ansprüche zugelassenen</i> <i>Frist; Veröffentlichung wird wiederholt falls Änderungen</i> <i>eintreffen.</i>
(54) Title: FORMULATION OF HERBICIDES AND PLANT GROWTH REGULATORS (54) Bezeichnung: FORMULIERUNG VON HERBIZIDEN UND PFLANZENWACHSTUMSREGULATOREN (57) Abstract <p>The invention relates to formulations containing a) at least one phosphonium or sulfonium salt of a sulfonylurea, wherein the phosphonium and sulfonium cation of the salt has at least one substituent that is not hydrogen, and b) conventional auxiliaries and additives.</p> (57) Zusammenfassung <p>Die vorliegende Erfindung betrifft Formulierungen, enthaltend: a) mindestens ein Phosphonium- oder Sulfoniumsalz eines Sulfonylharnstoffs, wobei das Phosphonium- und Sulfoniumkation des Salzes mindestens einen Substituenten aufweist, der von Wasserstoff verschieden ist, und b) übliche Hilfs- und Zusatzstoffe.</p>		

INTERNATIONAL SEARCH REPORT

International Application No
PCT/EP 00/00469

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 A01N47/38 A01N47/34 A01N47/36 A01N25/30 C11D1/60

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A01N C11D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 378 092 A (BASF AG) 18 July 1990 (1990-07-18) page 6, line 14-16 ---	1-17
X	EP 0 469 460 A (BASF AG) 5 February 1992 (1992-02-05) page 11, line 33-35 ---	1-17
X	WO 97 40021 A (DREWES MARK WILHELM ;GESING ERNST RUDOLF F (DE); KLUTH JOACHIM (DE) 30 October 1997 (1997-10-30) page 4, line 6-10 ---	1-17
X	WO 97 32875 A (BAYER AG ;GESING ERNST RUDOLF F (DE); DREWES MARK WILHELM (DE); JA) 12 September 1997 (1997-09-12) page 7, line 1,2 --- -/-	1-17

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *G* document member of the same patent family

Date of the actual completion of the international search

7 June 2000

Date of mailing of the international search report

20.06.00

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Klaver, J

INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP 00/00469

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 052 856 A (STAUFFER CHEMICAL CO) 2 June 1982 (1982-06-02) page 12, line 19-21 page 21, line 20-22 ---	1-17
Y	DE 26 09 105 A (BASF AG) 15 September 1977 (1977-09-15) page 3, paragraph 3 page 5, line 1 -page 6, line 1 ---	18
Y	US 4 240 982 A (HARRIS ROBERT F ET AL) 23 December 1980 (1980-12-23) column 2, line 5-24 column 7, line 21,22 -----	18

FURTHER INFORMATION PCT/ISA/210

The International Searching Authority found that this International Application contains several inventions or groups of inventions, as follows:

1. Claims Nos. 1-17

- Formulation containing (a) at least one phosphonium or sulfonium salt of a sulfonylurea, preferably of formula (Ia) according to claim 2, and (b) conventional auxiliaries and additives (claims 1-12).
- Use of said formulation as herbicidal agent or plant growth regulator (claim 13)
- Compound of formula (Ia) according to claim 3, as well as its use as herbicidal agent or plant growth regulator or method for its production (claims 14-17).

2. Claim No. 18

Use of an alkylalkoxylate compound of formula (XVIII) for producing an agrochemical formulation (claim 18).

INTERNATIONAL SEARCH REPORT

Information on patent family members

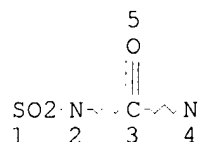
International Application No

PCT/EP 00/00469

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 0378092 A	18-07-1990	DE 3900472 A CA 2005595 A DE 59005654 D HU 52763 A,B JP 2225472 A JP 2834247 B	12-07-1990 10-07-1990 16-06-1994 28-08-1990 07-09-1990 09-12-1998
EP 0469460 A	05-02-1992	DE 4024754 A AT 129239 T CA 2048051 A DE 59106710 D ES 2077739 T JP 3001684 B JP 4243869 A US 5188657 A	06-02-1992 15-11-1995 04-02-1992 23-11-1995 01-12-1995 24-01-2000 31-08-1992 23-02-1993
WO 9740021 A	30-10-1997	DE 19616362 A AU 2569597 A	30-10-1997 12-11-1997
WO 9732875 A	12-09-1997	DE 19608831 A AU 717425 B AU 2092797 A BR 9708009 A CA 2248290 A CN 1218469 A EP 0885216 A	18-09-1997 23-03-2000 22-09-1997 27-07-1999 12-09-1997 02-06-1999 23-12-1998
EP 0052856 A	02-06-1982	AU 7759781 A BR 8107511 A DD 202368 A DK 506281 A ES 507277 D ES 8304933 A ES 516548 D ES 8401021 A FI 813670 A GR 71993 A JP 57118552 A NO 813906 A PL 233897 A PT 74006 A,B TR 21293 A US 4931580 A ZA 8108019 A JP 58083668 A	27-05-1982 10-08-1982 14-09-1983 20-05-1982 16-03-1983 16-06-1983 01-12-1983 16-02-1984 20-05-1982 26-08-1983 23-07-1982 21-05-1982 16-08-1982 01-12-1981 22-03-1984 05-06-1990 29-12-1982 19-05-1983
DE 2609105 A	15-09-1977	BE 852173 A FR 2342966 A GB 1573215 A IL 51374 A JP 52106807 A	07-09-1977 30-09-1977 20-08-1980 31-12-1980 07-09-1977
US 4240982 A	23-12-1980	US 4093663 A US 4260826 A US 4175196 A	06-06-1978 07-04-1981 20-11-1979

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L9 STR



NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 5

STEREO ATTRIBUTES: NONE

L11 36317 SEA FILE=REGISTRY SSS FUL L9

L21 STR

G1 1 @2 S + @3 P +

VAR G1=2/3

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DEFAULT MLEVEL IS ATOM

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GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 3

STEREO ATTRIBUTES: NONE

L22 7 SEA FILE=REGISTRY SUB=L11 SSS FUL L21

L25 6 SEA FILE=REGISTRY ABB=ON PLU=ON L22 AND NC>1

L26 5 SEA FILE=HCAPLUS ABB=ON PLU=ON L25

=> d ibib abs hitstr l26 1-5

L26 ANSWER 1 OF 5 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2000:534936 HCAPLUS

DOCUMENT NUMBER: 133:131179

TITLE: Formulation of sulfonylurea herbicides and plant growth regulators

INVENTOR(S): Schnabel, Gerhard; Haase, Detlev; Maier, Thomas; Martinez de Una, Julio; Wurtz, Jochen

PATENT ASSIGNEE(S): Aventis Cropscience G.m.b.H., Germany; Martinez De Una, Julio

SOURCE: PCT Int. Appl., 62 pp.

CODEN: PIXXD2

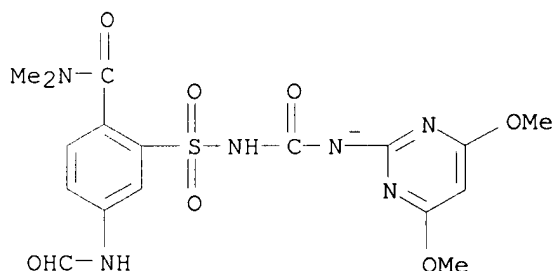
DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 2

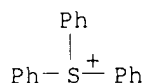
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000044227	A1	20000803	WO 2000-EP469	20000122
W: AE, AL, AM, AU, AZ, BA, BB, BG, BR, BY, CA, CN, CR, CU, CZ, DM, EE, GD, GE, HR, HU, ID, IL, IN, IS, JP, KG, KP, KR, KZ, LC, LK, LR, LT, LV, MA, MD, MG, MK, MN, MX, NO, NZ, PL, RO, RU, SG, SI, SK, TJ, TM, TR, TT, UA, US, UZ, VN, YU, ZA, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
DE 19903064	A1	20001005	DE 1999-19903064	19990127
DE 19963383	A1	20010705	DE 1999-19963383	19991228
CA 2360624	AA	20000803	CA 2000-2360624	20000122
BR 2000007772	A	20011030	BR 2000-7772	20000122
EP 1158858	A1	20011205	EP 2000-906217	20000122
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2002535345	T2	20021022	JP 2000-595540	20000122
PRIORITY APPLN. INFO.:				
			DE 1999-19903064 A	19990127
			DE 1999-19963383 A	19991228
			WO 2000-EP469 W	20000122
OTHER SOURCE(S): MARPAT 133:131179				
AB	The invention relates to formulations contg. (a) at least one phosphonium or sulfonium salt of a sulfonylurea, wherein the phosphonium and sulfonium cation of the salt has at least one substituent that is not hydrogen, and (b) conventional auxiliaries and additives.			
IT	286842-51-1 286842-52-2 286842-54-4 RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses) (herbicidal formulation of)			
RN	286842-51-1 HCAPLUS			
CN	Sulfonium, triphenyl-, salt with 2-[[[(4,6-dimethoxy-2-pyrimidinyl)amino]carbonyl]amino]sulfonyl]-4-(formylamino)-N,N-dimethylbenzamide (1:1) (9CI) (CA INDEX NAME)			
CM	1			
CRN	286838-54-8			
CMF	C17 H19 N6 O7 S			



CM 2

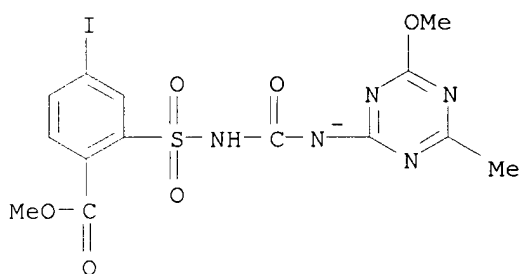
CRN 18393-55-0
CMF C18 H15 S



RN 286842-52-2 HCAPLUS
CN Sulfonium, triphenyl-, salt with methyl 2-[[[[(4,6-dimethoxy-1,3,5-triazin-2-yl)amino]carbonyl]amino]sulfonyl]-4-iodobenzoate (1:1) (9CI) (CA INDEX NAME)

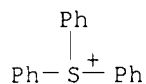
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CRN 286838-57-1
CMF C14 H13 I N5 O6 S



CM 2

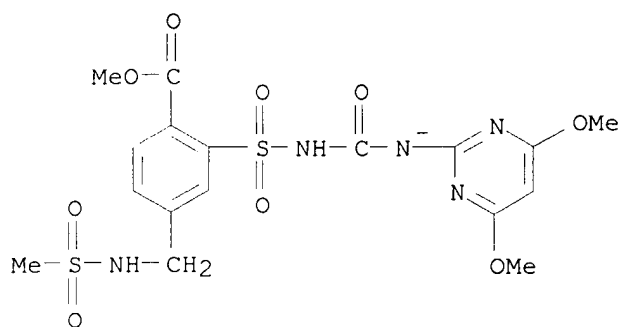
CRN 18393-55-0
CMF C18 H15 S



RN 286842-54-4 HCAPLUS
CN Sulfonium, triphenyl-, salt with methyl 2-[[[[(4,6-dimethoxy-2-pyrimidinyl)amino]carbonyl]amino]sulfonyl]-4-[[(methylsulfonyl)amino]methyl]benzoate (1:1) (9CI) (CA INDEX NAME)

CM 1

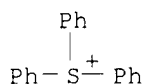
CRN 286842-53-3
CMF C17 H20 N5 O9 S2



CM 2

CRN 18393-55-0

CMF C18 H15 S



REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 2 OF 5 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1996:751875 HCAPLUS

DOCUMENT NUMBER: 126:15866

TITLE: Glyphosate-comprising synergistic herbicidal mixtures

INVENTOR(S): Lichtner, Francis Thomas, Jr.

PATENT ASSIGNEE(S): E.I. Du Pont De Nemours and Company, USA; Lichtner, Francis Thomas, Jr.

SOURCE: PCT Int. Appl., 17 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9634528	A1	19961107	WO 1996-US5951	19960429
W: AL, AU, BB, BG, BR, CA, CN, CZ, EE, GE, HU, IS, JP, KP, KR, LK, LR, LT, LV, MG, MK, MN, MX, NO, NZ, PL, RO, SG, SI, SK, TR, TT, UA, US, UZ, VN, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
FR 2733668	A1	19961108	FR 1995-5431	19950505
AU 9657177	A1	19961121	AU 1996-57177	19960429
EP 823837	A1	19980218	EP 1996-915388	19960429
EP 823837	B1	20010620		
R: DE, ES, FR, GB				
ES 2159028	T3	20010916	ES 1996-915388	19960429

US 5928995 A 19990727 US 1997-945865 19971103
 PRIORITY APPLN. INFO.: FR 1995-5431 A 19950505
 WO 1996-US5951 W 19960429

AB This invention relates to herbicidal mixts. of triflurosulfuron Me and glyphosate. The preferred crop is sugar beet, contg. gene(s) that confer tolerance to glyphosate.

IT **184355-14-4**
 RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)
 (synergistic herbicidal mixt.)

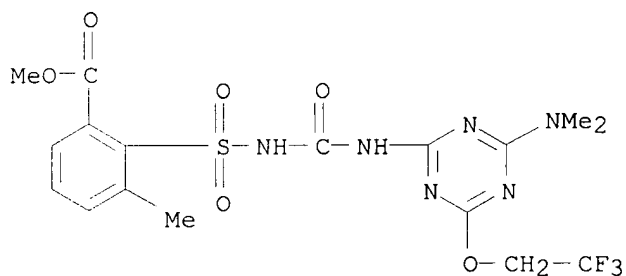
RN 184355-14-4 HCAPLUS

CN Glycine, N-(phosphonomethyl)-, ion(1-), trimethylsulfonium, mixt. with methyl 2-[[[4-(dimethylamino)-6-(2,2,2-trifluoroethoxy)-1,3,5-triazin-2-yl]amino]carbonyl]amino]sulfonyl]-3-methylbenzoate (9CI) (CA INDEX NAME)

CM 1

CRN 126535-15-7

CMF C17 H19 F3 N6 O6 S



CM 2

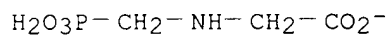
CRN 81591-81-3

CMF C3 H9 S . C3 H7 N O5 P

CM 3

CRN 81591-80-2

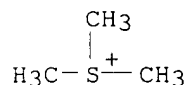
CMF C3 H7 N O5 P

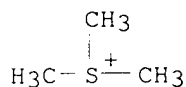


CM 4

CRN 676-84-6

CMF C3 H9 S





L26 ANSWER 3 OF 5 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1994:127796 HCAPLUS

DOCUMENT NUMBER: 120:127796

TITLE: Herbicide compositions containing magnesium salts.

INVENTOR(S): Yoshii, Hiroshi; Maeda, Masaru; Kikukawa, Koji

PATENT ASSIGNEE(S): Ishihara Sangyo Kaisha, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 05271021	A2	19931019	JP 1992-361995	19921225
JP 3253392	B2	20020204		

PRIORITY APPLN. INFO.: JP 1991-361431 A1 19911227

AB Herbicide compns. contain 1-(4,6-dimethoxypyrimidin-2-yl)-3-(3-trifluoromethyl-2-pyridylsulfonyl)urea (I) or its salts and homoalanin-4-ylmethylphosphinic acid (II), [2-amino-4-(hydroxymethylphosphinoyl)butyryl]alanylalanine and/or N-(phosphonomethyl)glycine, or their salts and inorg. Mg salt stabilizers. I (95% purity) 5.42, DL-II (84.6% purity) 54.1, Newkalgen EX 70 (Na dioctyl sulfosuccinate-Na benzoate mixt.) 20.0, MgCO₃ 20.0, and Glauber's salt 0.48 wt. part were mixed to prep. a wettable powder, which was dild. with H₂O and stirred at 25-30.degree. for 24 h to result in 3% decompn. of I, vs. 57%, without Mg salt.

IT **141563-83-9**

RL: BIOL (Biological study)
(herbicides contg. magnesium salts and)

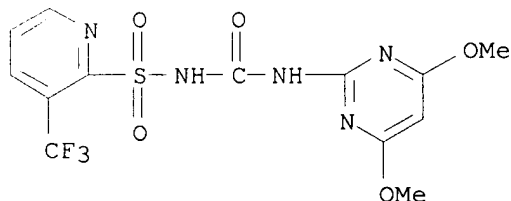
RN 141563-83-9 HCAPLUS

CN Glycine, N-(phosphonomethyl)-, ion(1-), trimethylsulfonium, mixt. with N-[[[4,6-dimethoxy-2-pyrimidinyl)amino]carbonyl]-3-(trifluoromethyl)-2-pyridinesulfonamide (9CI) (CA INDEX NAME)

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CRN 104040-78-0

CMF C13 H12 F3 N5 O5 S

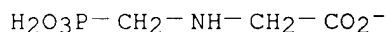


CM 2

CRN 81591-81-3
 CMF C3 H9 S . C3 H7 N O5 P

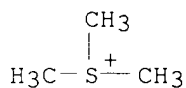
CM 3

CRN 81591-80-2
 CMF C3 H7 N O5 P



CM 4

CRN 676-84-6
 CMF C3 H9 S



L26 ANSWER 4 OF 5 HCAPLUS COPYRIGHT 2003 ACS
 ACCESSION NUMBER: 1992:250515 HCAPLUS
 DOCUMENT NUMBER: 116:250515
 TITLE: Synergistic herbicidal compositions comprising a
 pyridylsulfonylurea derivative
 INVENTOR(S): Sakashita, Nobuyuki; Yoshii, Hiroshi; Yoshida,
 Tsunezo; Honzawa, Shooichi; Kikugawa, Hiroshi
 PATENT ASSIGNEE(S): Ishihara Sangyo Kaisha, Ltd., Japan
 SOURCE: Eur. Pat. Appl., 12 pp.
 CODEN: EPXXDW
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 475392	A2	19920318	EP 1991-115391	19910911
EP 475392	A3	19921014		
EP 475392	B1	19960320		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE				
ZA 9106986	A	19920624	ZA 1991-6986	19910903
AU 9183706	A1	19920319	AU 1991-83706	19910906
AU 637717	B2	19930603		
JP 05070313	A2	19930323	JP 1991-308558	19910911
JP 2901794	B2	19990607		
BE 1005202	A3	19930525	BE 1991-845	19910911
AT 135528	E	19960415	AT 1991-115391	19910911
ES 2084741	T3	19960516	ES 1991-115391	19910911

HU 58472	A2	19920330	HU 1991-2938	19910912
HU 209758	B	19941028		
RU 2035143	C1	19950520	RU 1991-5001693	19910912
IL 99462	A1	19960912	IL 1991-99462	19910912
FR 2666723	A1	19920320	FR 1991-11348	19910913
FR 2666723	B1	19971212		
CN 1059828	A	19920401	CN 1991-109054	19910913
CN 1031973	B	19960612		
BR 9103954	A	19920526	BR 1991-3954	19910913
RO 109419	B1	19950228	RO 1991-148389	19910913
LV 10156	B	19950820	LV 1992-596	19921230
LT 3179	B	19950227	LT 1993-301	19930127
US 5434123	A	19950718	US 1993-161458	19931206

PRIORITY APPLN. INFO.:

	JP 1990-243252	A	19900913
	US 1991-757052	B2	19910909
	US 1992-923529	B1	19920803

AB Synergistic herbicidal compns. comprise 1-(4,6-dimethoxypyrimidin-2-yl)-3-(3-trifluoromethyl-2-pyridylsulfonyl)urea (I) and glyphosate, diquat, and/or paraquat. A mixt. of 1 g I and 5 g glyphosphate isopropylammonium salt/urea, applied postemergence, almost totally controlled *Digitaria sanguinalis* in pot expts., whereas the components by themselves were less effective.

IT **141563-83-9**
 RL: AGR (Agricultural use); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study); USES (Uses)
 (as herbicide, synergistic)

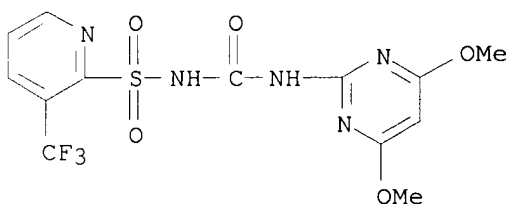
RN 141563-83-9 HCAPLUS

CN Glycine, N-(phosphonomethyl)-, ion(1-), trimethylsulfonium, mixt. with N-[[[4,6-dimethoxy-2-pyrimidinyl)amino]carbonyl]-3-(trifluoromethyl)-2-pyridinesulfonamide (9CI) (CA INDEX NAME)

CM 1

CRN 104040-78-0

CMF C13 H12 F3 N5 O5 S



CM 2

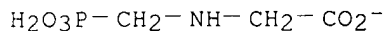
CRN 81591-81-3

CMF C3 H9 S . C3 H7 N O5 P

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CRN 81591-80-2

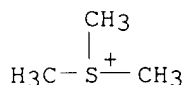
CMF C3 H7 N O5 P



CM 4

CRN 676-84-6

CMF C3 H9 S



L26 ANSWER 5 OF 5 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1968:49011 HCAPLUS

DOCUMENT NUMBER: 68:49011

TITLE: Sulfur-nitrogen compounds. II. Preparation and investigation of fluorosulfuryl compounds

AUTHOR(S): Roesky, Herbert W.; Hoff, Alfred

CORPORATE SOURCE: Univ. Goettingen, Goettingen, Fed. Rep. Ger.

SOURCE: Chemische Berichte (1968), 101(1), 162-73

CODEN: CHBEAM; ISSN: 0009-2940

DOCUMENT TYPE: Journal

LANGUAGE: German

AB FSO₂NCO (I) reacted with H₂O, MeOH, Et₂NH, and PhNH₂ to give (FSO₂NH)₂CO, FSO₂NHCO₂Me, FSO₂NHCONEt₂, and FSO₂NHCONHPh, resp. The compds. gave cryst. salts with alkali, alk. earth, and quaternary org. cations. I reacted with SF₄ to give FSO₂N:SF₂ and with Me₂SO to give FSO₂N:SMe₂. Hexamethyldisilazane reacted with I to give Me₃SiNCO. The reaction of I with N,N'-bis(trimethylsilyl)carbodiimide yielded 1:1 adduct. (Cl₃P:N)SO₂ treated with FSO₃H yielded FSO₂NHSO₂NHSO₂F and FSO₂NHSO₂F. The former was isolated as 2[Ph₄P]⁺(FSO₂N)₂SO₂²⁻. The physico-chem. properties and the ir and N.M.R. spectra of the compds. are given.

IT **19445-03-5P**RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of)

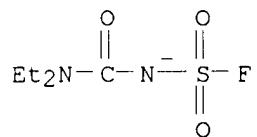
RN 19445-03-5 HCAPLUS

CN Phosphonium, tetraphenyl-, salt with (diethylcarbamoyl)sulfamoyl fluoride (1:1) (8CI) (CA INDEX NAME)

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CRN 45012-38-2

CMF C5 H10 F N2 O3 S



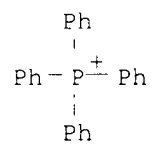
Clardy 09/890,086

June 10, 2003

CM 2

CRN 18198-39-5

CMF C24 H20 P



iodosulfuron

STATUS: ISO 1750 (published)

IUPAC: 4-iodo-2-[3-(4-methoxy-6-methyl-1,3,5-triazin-2-yl)ureidosulfonyl]benzoic acid

CAS: 4-iodo-2-[[[(4-methoxy-6-methyl-1,3,5-triazin-2-yl)amino]carbonyl]amino]sulfonyl]benzoic acid

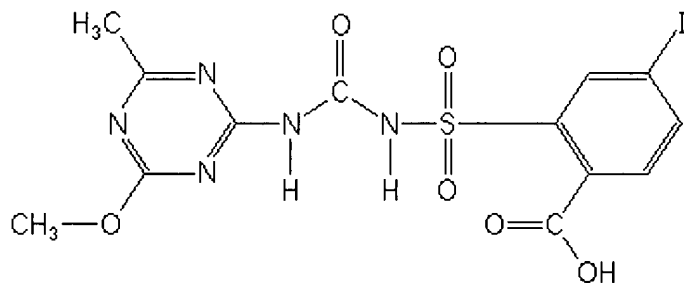
REG. NO.: 185119-76-0

FORMULA: $C_{13}H_{12}IN_5O_6S$

ACTIVITY: herbicides (triazinylsulfonylurea herbicides)

NOTES: This compound is normally used as a salt or an ester, the identity of which should be stated for example iodosulfuron-methyl-sodium [144550-36-7].

STRUCTURE:



| [Home](#) | [Index of common names](#) | [Pesticide classification](#) | [Site Map](#) | [No frames](#) |
